

Remarks

Claims 1-10 are pending in the subject application. Support for the above amendment to specification paragraph [0023] can be found in Fig. 5D. By this amendment, claim 1 has also been amended. It should be understood that the amendments presented herein have been made solely to expedite prosecution of the subject application to completion. No new matter has been added. These amendments should not be taken to indicate Applicant's agreement with, or acquiescence to, the rejections of record. Favorable consideration of the claims now presented, in view of the remarks and amendments set forth herein, is earnestly solicited.

The drawings are objected to at pages 2-3 of the Office Action. In particular, the drawings are objected to for the reference numeral **108c** not specifically pointing to any single region or combination of regions in Figs. 4 and 5D. Applicant resubmits Figs. 4 and 5D, which replace the arrow with a line. The layer in the via hole around the sides and bottom of the third contact plug **108b** is being referred to as the anti-fuse. No new matter has been introduced by these amendments. Support can be found, at least, at paragraph [0023] of the specification which states "Thus, the anti-fuse **108c** is formed in the second via hole **107** and a third contact plug **108b** is formed inside the anti-fuse." Applicant respectfully asserts that the objection to the drawings has been obviated by the replacement drawing sheets.

The specification is objected under 35 U.S.C. § 112, first paragraph for not uniquely identifying the claimed anti-fuse. Applicant asserts that this objection has been rendered moot. The specification does identify the claimed anti-fuse as explained above with respect to the objection to the drawings. Therefore, Applicant respectfully request reconsideration and withdrawal of this objection.

In addition, the specification is objected under 35 U.S.C. § 112, second paragraph for being indefinite. Applicant asserts that this objection has been rendered moot. The specification does identify the claimed anti-fuse as explained above with respect to the objection to the drawings. Furthermore, the claimed anti-fuse works as an anti-fuse because it is a dielectric layer between two conductive layers that becomes a conductive path at a particular applied voltage. Anti-fuse as claimed is an insulating layer that is formed between the two contact plugs. It is considered "anti-fuse" because it is an insulating layer between the second contact plug **108a** and the third contact

plug **108b** and will function as anti-fuse upon application of a certain voltage. Therefore, Applicant respectfully requests reconsideration and withdrawal of this objection.

Claims 1-10 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicant respectfully traverses. The specification supports the claimed anti-fuse as explained above with respect to the objections to the drawings and the objection to the specification under 35 U.S.C. § 112, first paragraph. Therefore, Applicant respectfully request reconsideration and withdrawal of this rejection.

Claims 6 and 10 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicant respectfully traverses because support can be found at Fig. 5D of the specification. Consequently, paragraph [0023] of the specification has been amended to recite what is illustrated in Fig. 5D. Therefore, no new matter has been introduced. Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 1-10 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant respectfully traverses. As explained above with regard to the objection to the specification under 35 U.S.C. § 112, second paragraph, the claimed anti-fuse works as an anti-fuse because it is a dielectric layer between two conductive layers that has the property of becoming a conductive path at a particular applied voltage. This is the understood definition of anti-fuse as provided by the Examiner in referring to Gertsner. Anti-fuse as claimed is an insulating layer that is formed between the two contact plugs. It is named "anti-fuse" because it is an insulating layer between the second contact plug **108a** and the third contact plug **108b** and will function as "anti-fuse."

In addition, claim 1 has been amended to more clearly describe the anti-fuse. Support for this amendment can be found, at least, at paragraph [0023] of the specification and claim 1 itself, where the anti-fuse is described as an insulating layer. Any one of ordinary skill in the art would understand that the insulating layer, functioning as anti-fuse, is for electrical connection at a certain condition rather than it being constantly electrically connected to the second contact plug, i.e., conducting layer. No new matter has been introduced by this amendment. Therefore, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 1 and 3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Tung *et al.* (U.S. 5,248,632) in view of Man (U.S. 5,533,635) and Wei *et al.* (U.S. 5,923,075) or in view of Man (U.S. 5,533,635). Applicant respectfully traverses because regardless of the definition of anti-fuse

used in these rejections, the cited references fail to teach or suggest an anti-fuse formed on the second contact plug in a second via hole of the second insulating layer and a third contact plug filling the second via hole and formed within the anti-fuse as specified by claims 1 and 3.

According to the first interpretation, i.e., the interpretation of anti-fuse as being the insulating layer, the Action, at page 8, admits that Tung does not necessarily teach the limitation “a third contact plug does not directly contact the second insulating layer.” In addition, the Action states that Tung does not necessarily teach the limitation that said anti-fuse is formed in a second contact hole as specified by claims 1 and 3, but the Action indicates that Man cures such deficiencies. However, not only does Tung fail to teach the aforementioned deficiencies, but it also fails to teach a third contact plug filling the second via hole and formed within the anti-fuse as specified by claims 1 and 3. Man does not cure these defects. In fact, merely interposing a TiW metal barrier layer between dielectric layer (30) and metal layer (40a) of Tung does not move the metal layer (40a) into the second via hole and within the anti-fuse as recited by the claims.

Furthermore, Wei does not cure this defect either. The Action states, at page 9, that a second via hole with contact plug is analogous to element **38** in Wei. However, the element **38** in Wei is not analogous to the second via hole as claimed in claims 1 and 3. Rather, Wei, at col. 3, lines 48-50, states that “conducting layer 38 electrically connects the anti-fuse cell and the source and drain regions.” In addition, Fig. 7 of Wei shows conducting layer **38** formed on part of the area of the anti-fuse cell (**28**). Therefore, the location where the anti-fuse is formed is not in a second via hole. Thus, conducting layer **38** taught by Wei does not provide disclosure of anti-fuse formed in a second via hole as claimed in claims 1 and 3. Therefore, Wei does not teach or suggest an anti-fuse formed on the second contact plug in a second via hole as claimed in claims 1 and 3.

According to the second interpretation, i.e., the anti-fuse being a conductive layer-insulating layer-conductive layer, the Action admits that Tung does not necessarily teach the limitation “a third contact plug does not directly contact the second insulating layer” as specified by claims 1 and 3, but the Action indicates that Man cure such deficiencies. As described above, Man does not cure such deficiencies.

However, even if the claimed anti-fuse includes an additional two conductive layers with the insulating layer, the cited references alone or in combination do not teach or suggest an anti-fuse formed on the second contact plug in a second via hole of the second insulating layer and a third

contact plug filling the second via hole and formed within the anti-fuse as specified by claims 1 and 3. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejection of claims 1 and 3.

Claims 4, 5, 7, and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tung *et al.* (U.S. 5,248,632) in view of Man (U.S. 5,533,635) and Wei *et al.* (U.S. 5,923,075). Applicant respectfully traverses. The deficiencies of Tung, Man, and Wei have been discussed above with respect to the rejection of claims 1 and 3, from which claims 4, 5, 7, and 9 depend. Therefore, Applicant asserts that Tung, Man, and Wei cannot teach or suggest the subject invention of claims 4, 5, 7, and 9. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the §103(a) rejection of claims 4, 5, 7, and 9.

Claim 2 is rejected under 35 U.S.C. §103(a) as being unpatentable over Tung *et al.* (U.S. 5,248,632) in view of Man (U.S. 5,533,635), and further in view of Madan *et al.* (U.S. 6,141,240). Applicant respectfully traverses. The deficiencies of Tung in view of Man have been discussed above with respect to the rejection of claim 1, from which claim 2 depends. Madan does not cure those defects. Therefore, Applicant asserts that Tung, Man, and Madan, alone or in combination, cannot teach or suggest the subject invention of claim 2. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the §103(a) rejection of claim 2.

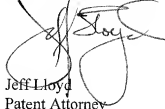
Claims 6, 8, and 10 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tung *et al.* (U.S. 5,248,632) in view of Man (U.S. 5,533,635) and Wei *et al.* (U.S. 5,923,075), and further in view of Kwok *et al.* (5,903,042). Applicant respectfully traverses. The deficiencies of Tung in view of Man and Wei have been discussed above with respect to the rejection of claims 1 and 3, from which claims 6, 8, and 10 depend. Kwok does not cure those defects. Therefore, Applicant asserts that Tung, Man, Wie, and Kwok, alone or in combination, cannot teach or suggest the subject invention of claims 6, 8, and 10. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the §103(a) rejection of claims 6, 8, and 10.

In view of the foregoing, Applicant believes that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16 or 1.17 as required by this paper to Deposit Account 19-0065.

Should any issues remain or should the Examiner believe that a telephonic conference with Applicant's attorney would be helpful in expediting prosecution of this application, the Examiner is invited to contact the undersigned.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jeff Lloyd", is written over a horizontal line.

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Attachments: Drawing replacement sheets